REMARKS

Applicants hereby request further consideration of the application in view of the amendments above and the comments that follow.

Status of the Claims

Claims 1-52 are pending in the application. Claims 1, 2 and 6 stand rejected under Section 102 as being anticipated by U.S. Patent No. 2,719,581 to Greathead (hereinafter "Greathead"). Claims 1, 2, 5, 6, 9, 11, 12, 14, 15 and 26 stand rejected under Section 102 as being anticipated by PCT Application No. WO 00/36340 to Dawson-Elli (hereinafter "Dawson-Elli"). Claim 49 stands rejected under Section 102 as being anticipated by U.S. Patent No. 3,437,415 to Davis et al. (hereinafter "Davis"). Claims 3, 4, 7, 8 and 16-25 stand rejected under Section 103 as being unpatentable over Dawson-Elli. Claims 49-52 stand rejected under Section 103 as being unpatentable over Greathead in view of U.S. Patent No. 5,484,263 to Nagaraj et al. (hereinafter "Nagaraj et al.").

Claims 10 and 13 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 27-48 have been allowed.

The Allowed and Objected to Claims

Applicants note with appreciation the Examiner's indication that Claims 27-48 are allowed.

Applicants note with appreciation the Examiner's indication that Claims 10 and 13 are objected to as depending from a rejected base claim, but would be allowable if rewritten in independent form. Claim 14 depends from Claim 13 and should therefore be deemed allowable as well. Because Applicants regard Claim 1 as allowable over the cited art (as discussed below), Applicants have not rewritten Claims 10 and 13 in independent form.

The Rejections under Sections 102 and 103

Claims 1-26 and 53-56:

Claim 1 recites:

> 1. A burner module for delivering a flow of chemical reactants to a combustion site of a chemical vapor deposition process, said burner module comprising:
>
> a) a plurality of substantially planar layers arranged in a generally parallel and fixed relationship and defining an inlet, an outlet and a passage fluidly connecting said inlet and said outlet, at least one of said layers being a distribution layer having a plurality of apertures therethrough and fluidly communicating with said passage;
>
> b) wherein said plurality of apertures collectively define a non-uniform pattern arranged and configured to improve the uniformity of a flow out through said outlet.

(Emphasis added). Claim 1 stands rejected under Section 102 as being anticipated by Greathead. Claim 1 also stands rejected under Section 102 as being anticipated by Dawson-Elli. For at least the reasons set forth below, Applicants respectfully submit that the rejections of Claim 1 are not supported by the cited references and should be withdrawn.

Regarding the Section 102 rejection in view of Greathead, the Action states:

> Greathead shows a burner module having a plurality of parallel planar layers (1, 2) where the distribution layer has a plurality of apertures of varying sizes (29, 31, 32) defining a non-uniform pattern.

(Action at page 3).

The welding torch as disclosed in Greathead does include a plurality apertures **29, 31, 32** that define a non-uniform pattern. However, the apertures **29, 31, 32** clearly are not configured to improve the uniformity of a flow out through **an outlet** of the welding torch. In fact, no two of the apertures **29, 31, 32** provide flow to a single

outlet. Rather, the apertures **29, 31, 32** are themselves the outlets of the welding torch. Thus, the apertures **29, 31, 32** do not affect a flow through an outlet as claimed.

Moreover, the apertures **29, 32, 32** are deliberately configured so as to provide a non-uniform flow from the face **28** of the block **2**. As described at col. 2, line 72 - col. 3, line 20, the welding torch is designed to provide flames of different sizes adjacent the leading and trailing ends thereof.

Accordingly, Greathead fails to disclose at least the above-noted limitations of Claim 1 and the rejection under Section 102 over Greathead should be withdrawn. Nor would it have been obvious to the ordinarily skilled artisan having knowledge of Greathead to have modified the Greathead welding torch so as to meet all of the limitations of Claim 1. To the contrary, Greathead teaches away from such modification.

Regarding the Section 102 rejection in view of Dawson-Elli, the Action states:

> Dawson-Elli et al shows and discloses a burner manifold (118) having first and second inlets (H, J) and a plurality of first and second outlets (not referenced) to which are mounted first and second adapter blocks including slotted lower and upper plenum layers (36a, 36b and 42a, 42b), burner face layers (58a, 58b), distribution layer (14a, 14b) including non-uniform (see the non-uniform spacing illustrated in figure 6).

(Action at page 3).

Applicant respectfully submits that the Examiner has derived a greater teaching from **Figure 6** of Dawson-Elli than is in fact disclosed or was intended[1]. In particular, the Examiner has derived a greater teaching from **Figure 6** of Dawson-Elli than would have been recognized or observed by the ordinarily skilled artisan upon review of **Figure 6** without the benefit of Applicants' disclosure. Any non-uniformity in the pattern of the apertures **38** of Dawson-Elli is very subtle, at most.

In fact, it appears (and would appear to the ordinary observer) that, to the extent there is any non-uniformity, it is the result of inexactness in the drafting of the

[1] Notably, the assignee of the present application was the assignee of the Dawson-Elli invention and prepared the specification that became the Dawson-Elli reference (i.e., WO 00/36340).

drawing and/or alteration caused by photocopying or the like. The specification of Dawson-Elli, taken as a whole, indicates that the pattern of the apertures **38** is in fact uniform. In the Dawson-Elli apparatus, the rows of apertures **38** are each aligned above a respective one of the grooves **34** (see **Figure 4**). A respective vertical passage **30c, 30d, 30e, 30f** terminates in each groove **34**. As clearly illustrated in **Figure 2**, the vertical passages **30c, 30d, 30e, 30f** are positioned at different locations in the grooves **34** relative to the Z-axis (see **Figure 2**). In view of this arrangement, it is not apparent how any perceived non-uniformity in the aperture pattern shown in **Figure 6** could serve to improve the uniformity of flow out through an outlet of the Dawson-Elli apparatus.

Accordingly, Dawson-Elli fails to disclose at least the above-noted limitations of Claim 1 and the rejection under Section 102 over Dawson-Elli should be withdrawn. Nor would it have been obvious to the ordinarily skilled artisan in view of Dawson-Elli to have modified the Dawson-Elli apparatus so as to meet all of the limitations of Claim 1.

Claims 2-26 and 53-56 depend from Claim 1 and are therefore allowable for at least the foregoing reasons. At least certain of Claims 2-26 and 53-56 are further allowable for the reasons discussed below. The following comments are not intended to be exhaustive of the patentable distinctions between the claimed inventions and the cited art.

Regarding Claim 2, Applicants are unable to discern from Dawson-Elli any distribution layer as claimed including apertures having non-uniform sizes.

Regarding Claim 6, Greathead does not include any component corresponding to the claimed burner face layer. In Greathead, the layer cited as corresponding to the claimed distribution layer (i.e., the layer in which the apertures are defined) is the outermost layer. To more clearly distinguish the cited reference, Claim 6 has been amended to recite that the distribution layer is separately formed from the burner face layer.

Regarding Claims 16 and 17, which stand rejected over Dawson-Elli under Section 103, the Action states:

> In regard to claims 3, 4, 7, 8 and 16-25, since the diameter and length of the apertures would necessarily depend on numerous design concerns such as the overall size and proportions of the burner apparatus, flame shape and size requirements, the type of fuel used, etc. select the diameter and dimensions of the apertures and passages as set forth in applicant's claims can be viewed a nothing more than a mere matter of choice in design absent the showing of any new or unexpected results there from over the prior art of record.

(Action at page 5). However, as discussed above, Dawson-Elli does not disclose a distribution layer have a plurality of apertures defining a non-uniform pattern. Moreover, Dawson-Elli does not disclose an apparatus including at least two such distributions layers in an arrangement as recited in Claim 16. Further, Dawson-Elli does not disclose such a burner module wherein the third and fourth non-uniform patterns are different from the first and second non-uniform patterns as recited in Claim 17. Dawson-Elli clearly lacks the recited structure or a recognition of the benefits that may be provided thereby. No motivation for modifying Dawson-Elli as proposed is apparent from the reference or the Action. Accordingly, Applicants respectfully submit that the proposed modifications to Dawson-Elli are not merely matters of design choice.

Claim 50:

Claim 50 has been rewritten in independent form and to further recite that the reflective layer is exposed. Claim 50 as filed stands rejected under Section 103 over Greathead in view of Nagaraj. With reference to col. 2, line 26 of Nagaraj, the Action contends that Nagaraj teaches providing oxide coatings as reflective coatings for high temperature nozzle components. However, Nagaraj only discloses the use of oxides for a "barrier layer". The barrier layer (e.g., barrier layer **14**) is described as a layer interposed between a reflective coating (e.g., reflective coating **16**) and a substrate (e.g., substrate **12**). As such, the barrier layer **14** is not exposed, but rather is covered

by the reflective coating **16**. Accordingly, the cited references do not teach or suggest a burner module as claimed.

CONCLUSION

Applicants submit that the present application is in condition for allowance and the same is earnestly solicited. Should the Examiner have any matters outstanding of resolution, he is encouraged to telephone the undersigned at 919-854-1400 for expeditious handling.

Respectfully submitted,

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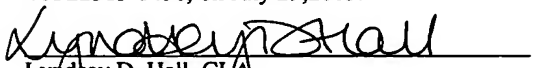
CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 29,2003.



Lyndsey D. Hall, CLA
Date of Signature: July 29, 2003